Amendment to the Claims:

This listing of claims will replace all prior versions, or listings, of claims in this application.

Listing of Claims

Claims 1-11: Cancelled

- 12. (Currently Amended) The method of elaim 8 Claim 23, comprising depositing a quartz epitaxial thin film on the substrate at a rate of about 3 µm per hour.
- 13. (Currently Amended) The method of elaim 8 Claim 23, wherein a composition of said quartz epitaxial thin film consists essentially of quartz.
- 14. (Currently Amended) The method of elaim 8 Claim 23, wherein the substrate is sapphire, silicon or GaAs.
- 15. (Currently Amended) The method of claim 8 Claim 23, wherein the source of silicon is heated to a temperature of 50° C to 120° C.
- 16. (Currently Amended) The method of elaim 15 Claim 23, wherein a temperature of a growth area, for depositing the quartz on the substrate, ranges from 550° C to 850° C.
- 17. (Currently Amended) The method of elaim 8 Claim 23, wherein said quartz epitaxial thin film is characterized by an X-ray diffraction profile exhibiting a diffraction peak at 20=50.6°.
- 18. (Canceled)
- 19. (Currently Amended) The method of elaim 8 Claim 23, wherein an inert gas is employed as a carrier gas to introduce said source of silicon into a growth area.
- 20. (Currently Amended) The method of Claim 19 Claim 23, wherein the oxygen partial pressure is 0.1 to 0.3 atm, in the growth area.
- 21. (Canceled)
- 22. (Currently Amended) The method of elaim-22 25, wherein the buffer layer is formed by depositing quartz at 550° C and annealing the deposited quartz.

23. (New) A method for producing a quartz epitaxial thin film on a substrate, said method comprising:

providing a substrate;

vaporizing, under atmospheric pressure, a source of silicon selected from the group consisting of tetramethoxysilane, tetraethoxysilane, tetrapropoxysilane and tetrabutoxysilane;

depositing quartz on said substrate using a catalyst, which is hydrogen chloride, to promote a reaction of the silicon source with oxygen, thereby forming the quartz epitaxial thin film.

24. (New) A method for producing a quartz epitaxial thin film on a substrate, said method comprising:

providing a substrate;

forming a buffer layer of GaN or ZnO on the substrate;

vaporizing, under atmospheric pressure, a source of silicon selected from the group consisting of tetramethoxysilane, tetraethoxysilane, tetrapropoxysilane and tetrabutoxysilane;

depositing quartz on said buffer layer using a catalyst, which is hydrogen chloride, to promote a reaction of the silicon source with oxygen, thereby forming said quartz epitaxial thin film.

25. (New) A method for producing a quartz epitaxial thin film on a substrate, said method comprising:

providing a substrate;

forming a crystal buffer layer of quartz on the substrate;

vaporizing, under atmospheric pressure, a source of silicon selected from the group consisting of tetramethoxysilane, tetraethoxysilane, tetrapropoxysilane and tetrabutoxysilane;

depositing quartz on said buffer layer using catalyst, which is hydrogen chloride, to promote a reaction of the silicon source with oxygen, thereby forming said quartz epitaxial thin film.

- 26. (New) The method of Claim 24, comprising producing the quartz epitaxial thin film on the substrate or the buffer layer at a rate of about 3 µm per hour.
- 27. (New) The method of Claim 24, wherein the quartz epitaxial thin film consists essentially of quartz.
- 28. (New) The method of Claim 24, wherein the substrate is sapphire, silicon or GaAs.

- 29. (New) The method of Claim 24, wherein the source of silicon is heated to a temperature of 50° C to 120° C.
- 30. (New) The method of Claim 24, wherein a temperature of a growth area, for depositing the quartz on the substrate, ranges from 550° C to 850° C.
- 31. (New) The method of Claim 24, wherein said quartz epitaxial thin film is characterized by an X-ray diffraction profile exhibiting a diffraction peak at $2\Theta=50.6^{\circ}$.
- 32. (New) The method of Claim 24, wherein an inert gas is employed as a carrier gas to introduce said source of silicon into a growth area.
- 33. (New) The method of Claim 24, wherein the oxygen partial pressure is 0.1 to 0.3 atm, in the growth area.
- 34. (New) The method of Claim 25, comprising producing a quartz epitaxial thin film on the substrate or the buffer layer at a rate of about 3 µm per hour.
- 35. (New) The method of Claim 25, wherein the epitaxial thin film consists essentially of quartz.
- 36. (New) The method of Claim 25, wherein the substrate is sapphire, silicon or GaAs.
- 37. (New) The method of Claim 25, wherein the source of silicon is heated to a temperature of 50° C to 120° C.
- 38. (New) The method of Claim 25, wherein a temperature of a growth area, for depositing the quartz on the substrate, ranges from 550° C to 850° C.
- 39. (New) The method of Claim 25, wherein said quartz epitaxial thin film is characterized by an X-ray diffraction profile exhibiting a diffraction peak at 2Θ=50.6°.
- 40. (New) The method of Claim 25, wherein an inert gas is employed as a carrier gas to introduce said source of silicon into a growth area.
- 41. (New) The method of Claim 25, wherein the oxygen partial pressure is 0.1 to 0.3 atm, in the growth area.